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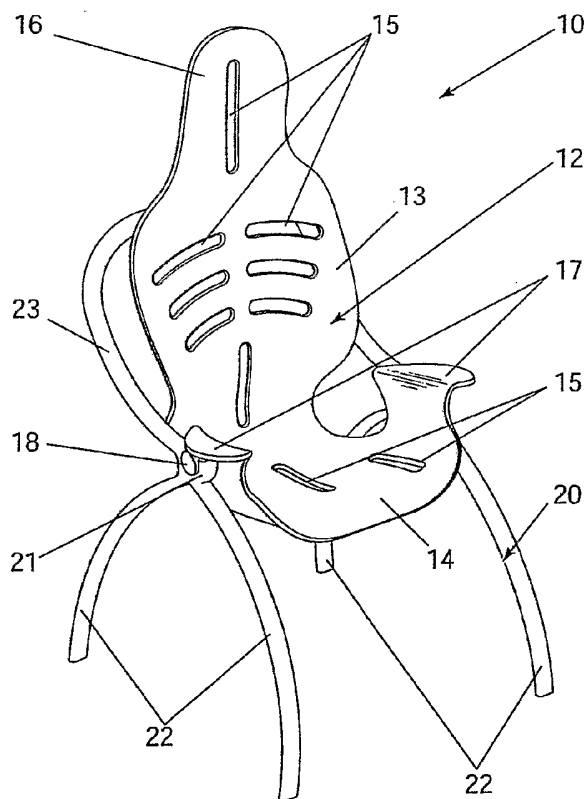
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(54) Title: MODULAR ERGONOMIC CHAIR



(57) Abstract: A modular ergonomic chair comprises a body (12) and a supporting structure (20), wherein the body (12) comprises a back (13) and a seat (14) having a series of notches, or fissures (15), suitable for giving flexibility, and also arms (17) integral with the seat (14) and wherein the body (12) is equipped with pivots (18, 21) on the outer sides of the arms for connection to the structure (20), said pivots (18, 21) being aligned on a common axis to allow a swinging movement of the body (12) with respect to the structure (20).



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MODULAR ERGONOMIC CHAIR

The present invention relates to a modular ergonomic chair.

10 In some environments, there is the necessity of availing of a large number of chairs which can be easily dismantled and put away with a low encumbrance, and vice versa, to allow the number to be adapted in a short period of time to the specific demands. In particular, 15 these refer to waiting rooms or, in any case, structures open to the public. Furthermore, it may be appropriate in these structures to use seats with different ergonomic characteristics.

 In particular, health environments such as hospitals, surgeries or the like, which accommodate a large 20 number of people every day, whether they be internal or outside visitors or users, have the necessities described. Users, in fact, during the time spent within the structure, must have the possibility of sitting down 25 while waiting in chairs specifically provided for this

purpose.

In health environments, various types of use of chairs on the part of the users of the structures and visitors, can be substantially identified. In particular, in waiting areas, such as entrance halls or corridors, chairs are arranged on which the internal or outside users and visitors to the structure can be seated for brief periods of time. In waiting rooms, however, for example of surgeries, the waiting times are generally more prolonged. Finally, invalids or patients having a limited mobility due to accidents or in any case under conditions of considerable suffering are compelled to remain seated for even lengthy periods of time and have great difficulty in changing position. Furthermore, so-called wheel-chairs are used for moving and transferring these patients.

The various types of use of the chairs described are all marked by different requisites in terms of practicality, cleanliness, comfort, costs, adaptability to the specific demands, etc.

In public waiting rooms, for example, there should be a large number of economical chairs, which are easy to clean, resistant, easy to position, remove and stack up to allow the number and type to be adapted to the requirements of the moment.

Chairs destined for patients under moderate suffering conditions, who must wait for more prolonged times, must be more comfortable, for example having padding with specific materials, to the detriment of the resistance and economical aspect.

Finally, for invalids and highly suffering patients, the chairs must satisfy specific medical requirements, for example relating to posture, and must be equipped with accessories which have been specifically studied on the basis of the demands.

At present, there is no single product which is capable of specifically solving all of the requisites in a health environment indicated above.

The quantity and quality of the chairs present in health environments, as also in other sectors, are consequently often insufficient as these structures cannot provide a large number of different products, specific for all requirements, due to the high costs and excessive encumbrance deriving therefrom.

Furthermore, the chairs currently on the market destined for rest environments, such as waiting rooms, do not adequately satisfy the ergonomic and flexibility criteria.

An objective of the present invention is to provide a modular ergonomic chair consisting of a reduced number

of modular basic components to produce various types of chairs which can be adapted to different requirements of practicality and comfort.

A further objective of the present invention is to
5 provide a modular ergonomic chair which can be configured according to different ergonomic levels, for example as a basic chair for waiting rooms, a comfortable chair for longer waiting times and a "medical" chair provided with padding and anatomical cushions shaped according to spe-
10 cific demands.

Another objective of the present invention is to provide a modular ergonomic chair which is particularly simple and functional, with limited costs.

These objectives according to the present invention
15 are achieved by providing a modular ergonomic chair as illustrated in claim 1.

Further characteristics are specified in the dependent claims.

The characteristics and advantages of a modular ergonomic chair according to the present invention will appear more evident from the following, illustrative and non-limiting description, referring to the enclosed schematic drawings, in which:
20

figure 1 shows a first embodiment of a modular ergonomic chair, object of the present invention, configured
25

as a basic chair fixed to the wall;

figure 2 shows a second embodiment of a modular ergonomic chair, object of the present invention, configured as a basic chair, resting on the ground;

5 figure 3 shows a further embodiment of a modular ergonomic chair, object of the present invention, configured as a basic chair, applied to a frame, or island structure, for the aggregation of various chairs;

figure 4 is a perspective view of a further embodiment of a body for a modular chair according to the invention;
10

figure 5 shows a further embodiment of a modular ergonomic chair, object of the present invention, configured as a comfortable chair for prolonged waiting times;

15 figure 6 shows a further embodiment of a modular ergonomic chair, object of the present invention, configured as a medical chair for health environments equipped with anatomical cushions;

figure 7 shows a further embodiment of a modular ergonomic chair, object of the present invention, configured as a medical chair for health environments equipped with both anatomical cushions and also wheels;
20

figure 8 shows an enlarged detail of a fixing means between the body and supporting structure.

25 With reference to the figures, these show a modular

ergonomic chair indicated as a whole with 10 and, in its different configurations, comprising a body 12, made of a plastic material, such as for example a reinforced engineering polymer with resistance and flexibility properties, and a tubular supporting structure 20, for example metallic.

In a first embodiment of the ergonomic chair 10 according to the present invention, shown in figure 1 according to a basic configuration, the body 12 comprises a back 13 and a seat 14 equipped with a series of notches, or fissures 15, which are shaped so as to graduate the elasticity according to pressure points of the back and glutei.

The notches 15, which can have a varying number and form, as shown for example in figures 2 and 4, give the body 12 flexibility and form insertion means for accessory cushions optionally applied to the body to improve and personalize, according to demands, the comfort of the chair 10 in the more complex configurations shown in figures 5 and 6.

The body 12 can comprise a headrest 16 integral with the back 12 and shown in the figures mentioned above.

The body 12 also comprises arms 17 integral with the seat 14, whose outer sides contain pivots for connection to the supporting structure 20.

The pivots are aligned on a common horizontal axis and allow a rotating swinging movement of the body 12 with respect to the structure 20, which facilitates a change of position for the patient, providing a relaxing
5 effect.

Each of the pivots comprises a pin 18 integral with the body 12 and positioned in correspondence with a semi-circular seat, or cradle, 21 of the supporting structure 20. The semicircular seat 21 is open on an upper side to
10 allow a rapid positioning and a rapid removal of the body 12 with respect to the supporting structure 20 to facilitate the cleaning and storage of the bodies and, in the case of necessity, also the moving of the patients.

In a preferred embodiment of the seat 10 according
15 to the invention, the pivot is equipped with a blocking device 19 of the position of the body 12 with respect to the supporting structure 20 for blocking the body, if necessary, in a pre-established position.

The blocking device shown in the enlarged and exploded detail of figure 8, according to an illustrative
20 and non-limiting embodiment, comprises a discoidal element 19 applied to the end of the pin 18 and moveable between two axial positions according to the arrows F by means of the rotational action effected by the user. In
25 particular, in a first blocking position, the discoidal

element 19 is locked against the supporting structure 20 and in a second position, it is disengaged with respect to the structure itself.

Further blocking devices, not shown, also devices
5 known to experts in the field, can be equivalently used.

The supporting structure 20, of which figures 1 to 3 show different embodiments, comprises at least two tubular legs 22 and a tubular back support 23 arranged behind the back 13.

10 The legs are joined together at opposite ends of the back support 23 close to the two semicircular seats 21.

In the modular ergonomic chair 10 of figure 1, the two legs 22 rest laterally against a first lower horizontal tubular element 24 applied to the wall, and the back
15 support 23 is equipped with a hooking device 25 for hanging the body 12 to a second upper horizontal tubular element 26.

In the further embodiment of the chair 10 according to a basic configuration shown in figure 2, the legs 22
20 of the supporting structure 22 are two pairs of tubular legs, each pair consisting of two arched-shaped legs joined to each other as well as to the back support 23 close to the semicircular seats 21.

Figure 3 therefore shows a third possible embodiment
25 of ergonomic chairs 10 according to the invention aggre-

gated to each other by means of a frame, or island structure, comprising two or more bases 27, for example made of marble, which support two lower 24 and upper 26 horizontal tubular elements, to which the chairs 10 are applied according to what is shown in figure 1.

The modular ergonomic chairs 10 object of the present invention, shown in figures 1 to 3 are assembled according to a basic configuration suitable for short stopping periods on the part of outside visitors or users of the structures, for example, medical staff, which can be used, for example, in entrance halls. These ergonomic chairs are without padding to facilitate cleaning and increase their duration. In this case, the comfort of the position is obtained by the elasticity of the material of the body, its enveloping shape and the rotational movement of the pivots.

The chairs suspended to the horizontal tubular elements and consequently not resting on the ground, also have the advantage of allowing easy cleaning of the floor.

Figure 5 shows a further embodiment of a modular ergonomic chair 10 according to the present invention, in which the seat 14 and the back 13 are both equipped with a padded cushion 28, for example, consisting of polyurethane foams, or similar materials, lined with a washable

material.

The cushions 28 are applied and maintained in position on the body by the engagement of a series of protruding positioning elements 29 situated on a rear surface thereof, which, as shown by the dashed line in figure 5, are shaped complementary to the fissures 15 of the body 12 to be coupled therewith.

The chair 10 provided with a layer of padding, which can be aggregated to other chairs 10 analogously to what is shown in figure 3, represents a comfortable chair, suitable for prolonged periods of time. These chairs can be used in waiting rooms, in other places in which medium-long waiting times are envisaged, for example in surgeries for moderately suffering patients.

Figures 6 and 7 show two further configurations of modular anatomical chairs 10 equipped with a series of anatomical padded cushions 30 specifically shaped for the specific rest point. These chairs can be particularly used in health structures.

These cushions 30, made for example of expanded material and/or with a viscous behaviour, are applied to the body 12 by means of the engagement means 29 described above and can be made to measure for patients with particular pathologies.

The chairs 10 provided with anatomical cushions 30

are suitable for lengthy waiting periods, for example on the part of invalids and/or highly suffering patients, and can be configured as wheelchairs by removably applying pairs of wheels 31 to the legs, connected by a tightening bar 32, optionally equipped with foot-supports 33 and brakes 34. The chair 10 equipped with wheels 31 can be moved by pushing it from the back-support 23.

The chair 10 shown in figure 7 is also equipped with a containment element for objects 35, in particular the containment of a case sheet, a glass or bottle and the like, as well as with a drip-holder element or rod 36 applied to the tubular supporting structure 20.

The accessories described can obviously also be applied to the chairs shown in the previous figures.

The modular ergonomic chair, object of the present invention, has the advantage of optimizing the position ergonomics thanks to the mobility of the body, i.e. the flexibility of the back and swinging movement of the body with respect to the supporting structure, which allows a change in position with a minimum effort.

Furthermore, the chair according to the invention, which advantageously provides a support for the arms, can be adapted in relation to the position and load offering a differentiated support according to the compression areas of the back-gluteus system. The chair can also be ad-

vantageously personalized in relation to the degree of comfort desired.

A further advantage of the present invention consists in the serial nature of the production after unification of the components which, when variably assembled
5 with each other, allow the maximum extension of uses and applications.

Furthermore, the modular ergonomic chair, object of the present invention, is easy to use and aggregate according to different configurations and with numerous accessories.
10

Finally, the chair according to the invention is advantageously marked by the easy dismantling of the modular components, the possibility of stacking these up to
15 reduce encumbrance, and also from the point of view of hygiene, thanks to the use of materials and forms which facility cleaning.

The modular ergonomic chair thus conceived can undergo numerous modifications and variations, all included
20 in the invention; furthermore, all the details can be substituted by technically equivalent elements. In practice, the materials used; as also the dimensions, can vary according to technical demands.

CLAIMS

1. A modular ergonomic chair comprising a body (12) and a supporting structure (20), characterized in that said body (12) comprises a back (13) and a seat (14) having a series of notches, or fissures (15), suitable for giving flexibility, and also arms (17) integral with said seat (14), said body (12) being equipped with pivots (18, 21) on the outer sides of the arms for connection to said structure (20), wherein said pivots (18, 21) are aligned on a common axis and allow a swinging movement of said body (12) with respect to the structure (20).

2. The chair according to claim 1, characterized in that said pivots each comprise a pin (18) integral with the body (12) and which can be positioned in correspondence with a seat, or cradle, (21) of said supporting structure (20).

3. The chair according to claim 2, characterized in that said chair (21) is semicircular and open on an upper side for a rapid positioning of said body (12) with respect to said supporting structure (20).

4. The chair according to claim 2, characterized in that said pivot (18, 21) is equipped with a blocking device (19) of the position of said body (12) with respect to said supporting structure (20).

5. The chair according to claim 4, characterized in

that said blocking device comprises a discoidal element (19) applied to the end of said pin (18), said discoidal element (19) being moveable between two axial positions, a first blocking position in which it is locked against
5 said supporting structure (20) and a disengagement position from said structure (20).

6. The chair according to claim 1, characterized in that said body (12) made of a plastic material comprises a headrest (16) integral therewith.

10 7. The chair according to claim 2, characterized in that said supporting structure (20) comprises at least two tubular legs (22) and a tubular back support (23), wherein said at least two legs (22) are joined together at opposite ends of said back support (23) close to said
15 two semicircular seats (21) of the supporting structure (20).

8. The chair according to claim 7, characterized in that said at least two legs are two pairs of tubular legs (22), each pair consisting of two arched-shaped legs (22)
20 joined to each other and also to said ends of the back support (23) close to said semicircular seats (21).

9. The chair according to claim 8, characterized in that said at least two legs are two legs (22) for resting against a side wall and that said back support (23) com-
25 prises at least a hooking device (25) to an upper hori-

zontal tubular element (26).

10. The chair according to claim 9, characterized in that said two legs (22) for resting against a side wall can be connected to a first lower horizontal tubular element (24).

11. The chair according to claim 9 or 10, characterized in that said horizontal tubular element (24, 26) can be applied to a wall.

12. The chair according to claim 9 or 10, characterized in that said horizontal tubular element (24, 26) is held up by at least one base (27) resting on the ground, said chair being part of a frame, or island structure, suitable for aggregating several chairs.

13. The chair according to claim 7, characterized in that said back support (23) is situated behind said back (13) of the body (12).

14. The chair according to claim 1, characterized in that it comprises at least one padded cushion (28, 30) provided on a rear surface with a series of protruding positioning elements (29) shaped for engagement with said fissures (15) of the body (12).

15. The chair according to claim 14, characterized in that it comprises a cushion (28) for said seat (14) and a cushion (28) for said back (13).

16. The chair according to claim 14, characterized in

that it comprises a series of anatomical padded cushions (30) specifically shaped for the rest point.

17. The chair according to claim 14, characterized in that said at least one cushion (28, 30) consists of
5 polyurethane foams lined with a washable material.

18. The chair according to claim 14, characterized in that said at least one cushion (28, 30) consists of an expanded material.

19. The chair according to claim 8, characterized in
10 that it comprises pairs of wheels (31) removably applied to said legs (22).

20. The chair according to claim 1, characterized in that it comprises a containment element of objects (35), in particular for the containment of a case sheet, and/or
15 a drip element or rod (36) applied to said tubular supporting element (20).

Fig 1

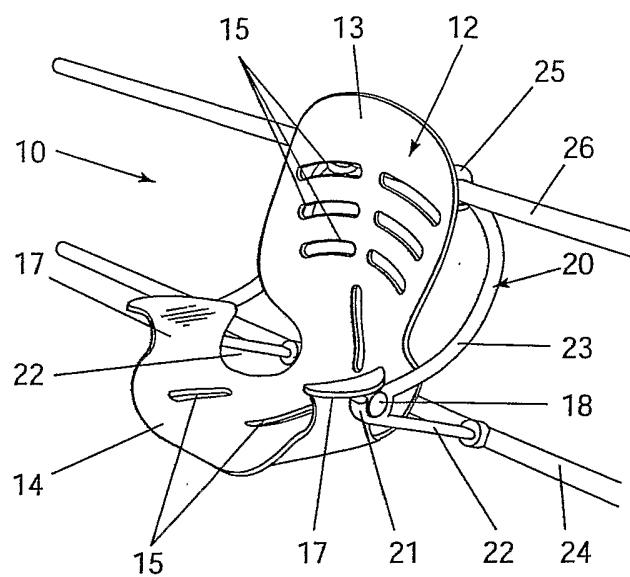


Fig 2

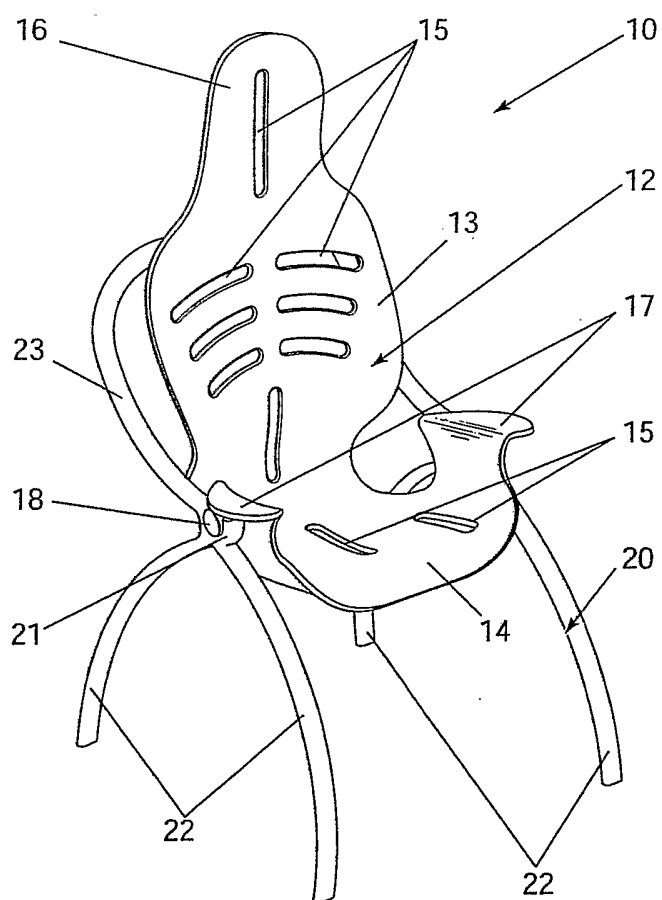
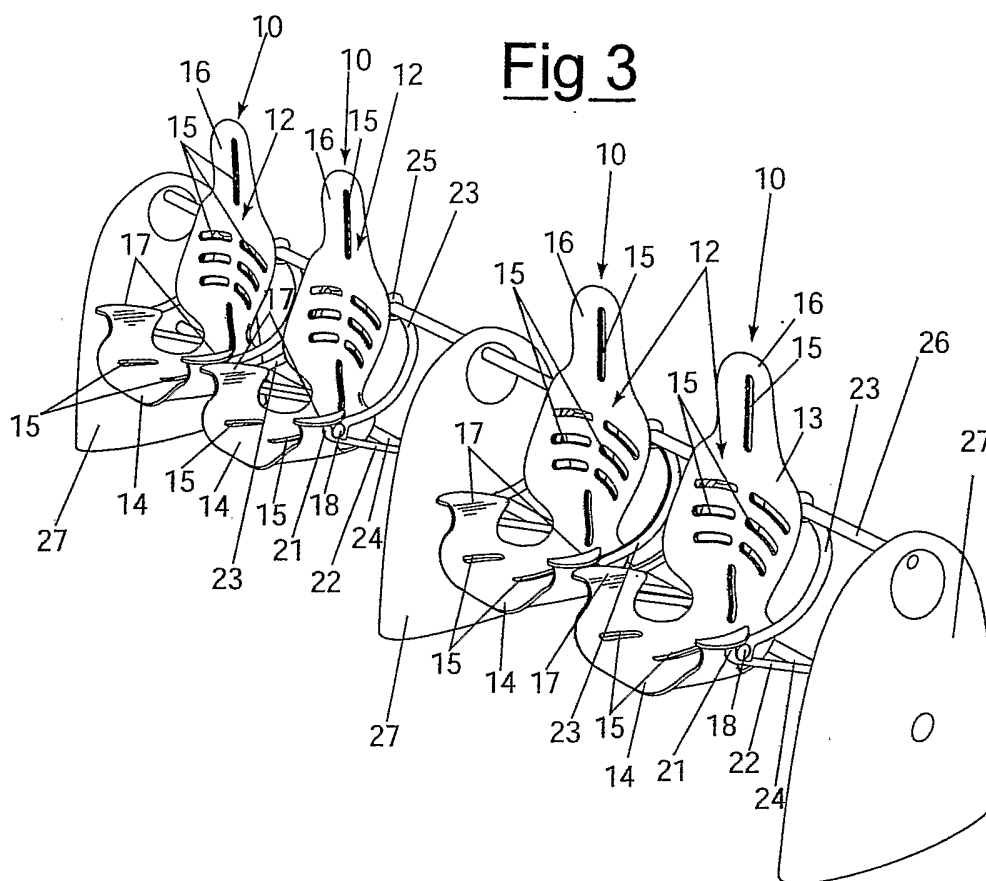
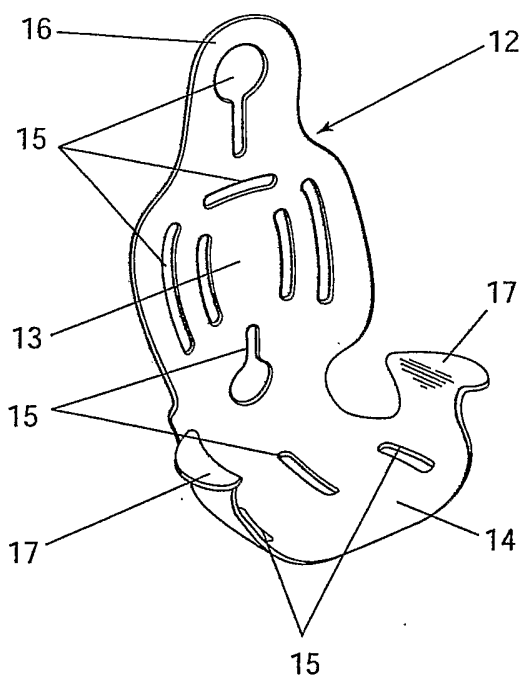


Fig 3**Fig 4**

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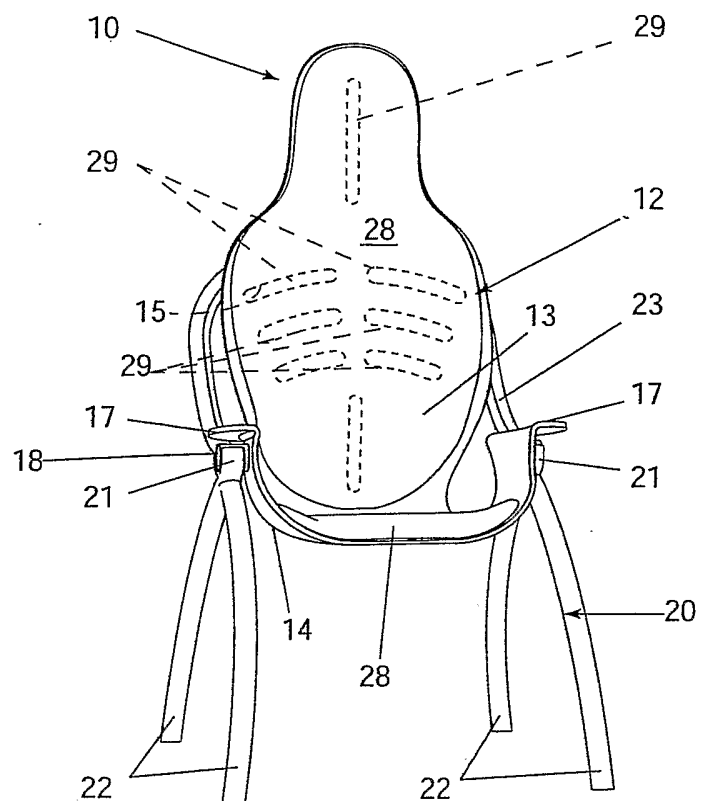


Fig 5

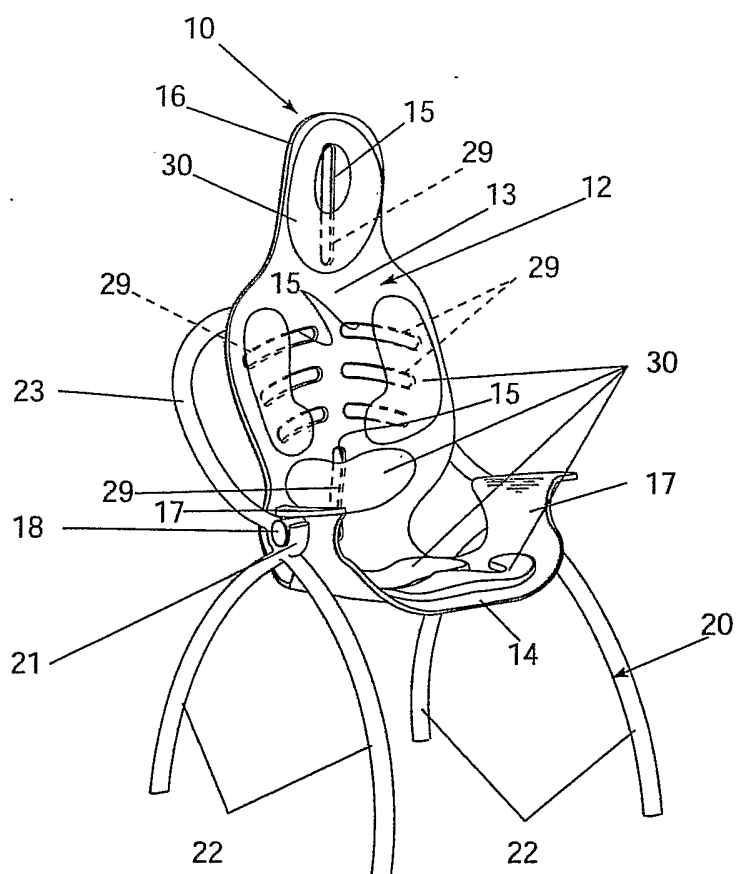


Fig 6

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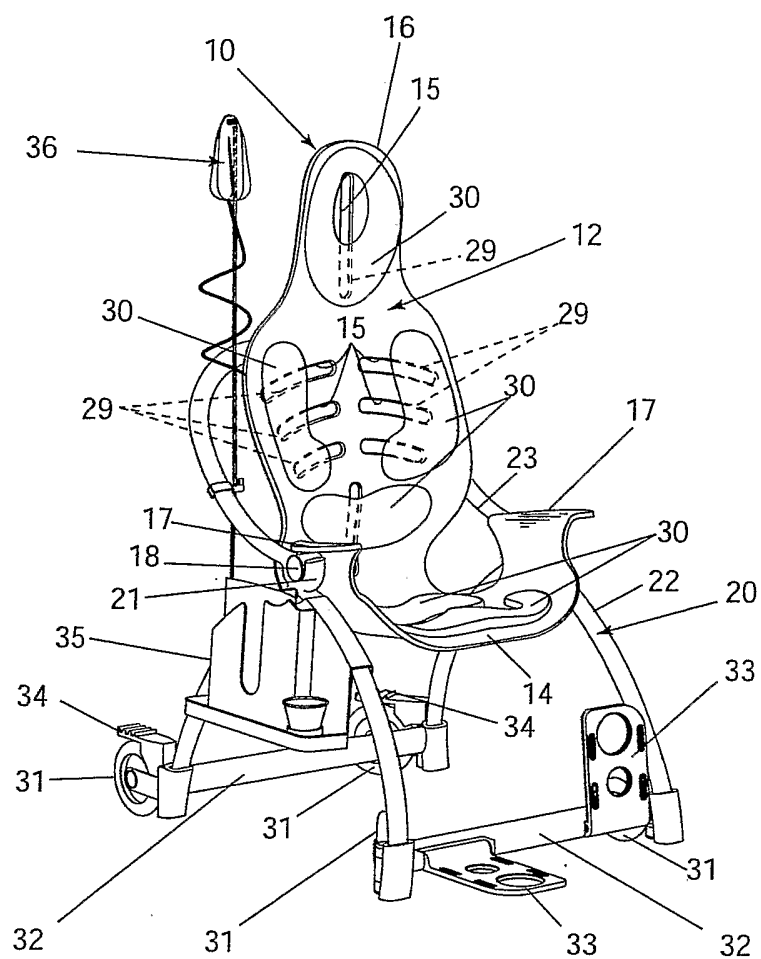


Fig 7

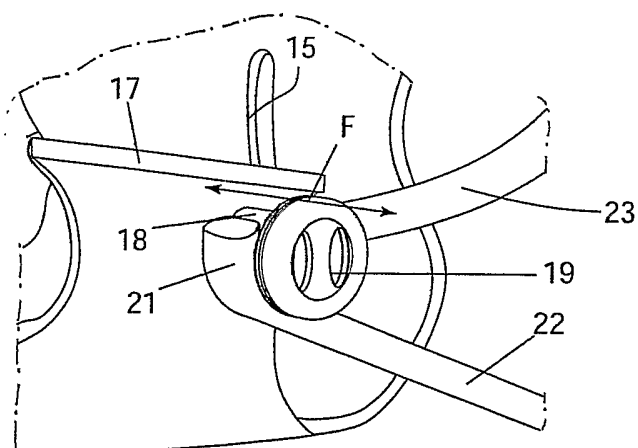


Fig 8